CLAIMS

1. A method for controlling the partial pressure of oxygen when mutually separating minerals from a slurry containing valuable minerals in the different process steps of the separation process, **characterized** in that in order to control the partial pressure of oxygen, the gases fed in the different process steps are recirculated in an essentially closed gas circulation created around the equipment used in the different process steps, so that the gas recirculation is controlled by measuring the potential of the slurry containing valuable minerals.

2. A method according to claim 1, **characterized** in that the process is provided with equipment required for the gas transfer and recirculation.

3. A method according to claim 2, **characterized** in that the process is provided with a recirculation pipework, at least with one fan and a storage tank.

4. A method according to any of the preceding claims, **characterized** in that in the recirculation of gases, there is utilized the suction and underpressure naturally created owing to the rotation of the agitation equipment installed in the different process steps.

5. A method according to any of the preceding claims, **characterized** in that the feeding of the secondary gas needed in the process is divided according to the separate process steps, so that the same secondary gas is fed to the different process steps.

6. A method according to any of the preceding claims 1 – 4, **characterized** in that the partial pressure of oxygen in the secondary gas needed in the process is changed between secondary gas additions fed in the different process steps.

7. A method according to any of the preceding claims, **characterized** in that the oxygen addition needed for controlling the partial pressure of oxygen is obtained by feeding air in the process.

8. A method according to any of the preceding claims 1 – 6, **characterized** in that the oxygen addition needed for controlling the partial pressure of oxygen is obtained by feeding oxygen in the process.

9. A method according to any of the preceding claims 1 – 6, **characterized** in that the oxygen addition needed for controlling the partial pressure of oxygen is obtained by feeding oxygen enriched air in the process.

10. A method according to any of the preceding claims, **characterized** in that the oxidizing gas contains ozone (O_3).

11. A method according to any of the preceding claims, **characterized** in that the recirculation gas contains reducing gas.

12. A method according to claim 11, **characterized** in that the recirculation gas contains hydrogen sulphide.

13. A method according to claim 11, **characterized** in that the recirculation gas contains sulphur dioxide.

14. A method according to any of the preceding claims, **characterized** in that the grinding step of the process is closed in the gas circulation.

15. A method according to any of the preceding claims 1 – 13, **characterized in** that the flotation step used for mutually separating the minerals is closed in the gas circulation.

16. A method according to any of the preceding claims 1 – 13, **characterized** in that the precipitation step used for mutually separating the minerals is closed in the gas circulation.

17. A method according to any of the preceding claims 1 – 13, **characterized** in that the filtering step used for mutually separating the minerals is closed in the gas circulation.

18. A method according to any of the preceding claims, **characterized** in that the potential of the slurry containing valuable minerals is measured by mineral electrodes.

19. A method according to any of the preceding claims 1 – 17, **characterized** in that in the measurement of the potential of the slurry containing valuable minerals, impedance is made use of.

20. A method according to any of the preceding claims1 – 17, **characterized** in that in the measurement of the potential of the slurry containing valuable minerals, reagent contents are made use of.